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We claim:

A process for the preparation of O-(2-hydroxyalkyl) oximes of
 the general formula

$$R^{1}$$
 $C = N - O - CH_{2} - CH - OH$ (I),

in which R^1 and R^2 each stand for an alkyl group having from 1 to 10 carbon atoms or form, together with the carbon atom to which they are attached, a 5-membered to 7-membered cycloalkyl radical, and R^3 denotes an alkyl group having from 1 to 10 carbon atoms, wherein a ketoxime of the general formula II

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$$R^1 = N - OH$$
 (II),

is caused to react with

25 a) an olefin oxide of the general formula III

$$H_2C \stackrel{O}{\longrightarrow} CH - R^3$$
 (III),

in the presence of a tertiary amine or

b) a carbonate of the general formula IV

in the presence of a catalyst.

- 2. A process as defined in claim 1, wherein the ketoxime II used is acetone oxime, butanone oxime, or cyclohexanone oxime.
- A process as defined in claim 1, wherein the ketoxime II used
 is acetone oxime.
 - 4. A process as defined in any of claims 1 to 3, wherein the starting material is a compound III or IV in which R³ denotes methyl.

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- 5. A process as defined in any of claims 1 to 4, wherein triethylamine is used as tertiary amine in process variant (a).
- 6. A process as defined in any of claims 1 to 4, wherein N,N-dimethylcyclohexylamine is used as tertiary amine in process variant (a).
- 7. A process as defined in any of claims 1 to 6, wherein potassium hydrogen carbonate is used as catalyst in process variant (b).
 - 8. A process as defined in any of claims 1 to 6, wherein potassium hydrogen carbonate is used as catalyst in process variant (b).

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- 9. A process as defined in any of claims 1 to 6, wherein a tertiary amine is used as catalyst in process variant (b).
- 10. A process as defined in claim 1, wherein II is reacted with 30 IV without a solvent.

